


Date: Monday, 03/11/2008 12:12:34 PM  
 User: Chantal Lavoie

## Process Sheet

<b>Customer</b> :	CU-DAR001 Dart Helicopters Services	<b>Drawing Name</b> :	ROUND BILLET 17-4
<b>Job Number</b> :	43150		
<b>Estimate Number</b> :	10040		
<b>P.O. Number</b> :		<b>Part Number</b> :	D6104005
<b>This Issue</b> :	03/11/2008	<b>S.O. No.</b> :	
<b>Prsht Rev.</b> :	NC	<b>Drawing Number</b> :	D6104 REV B
<b>First Issue</b> :	//	<b>Project Number</b> :	N/A
<b>Previous Run</b> :	41966	<b>Drawing Revision</b> :	B
	<b>Type</b> :	<b>Material</b> :	
	PURCHASED PARTS	<b>Due Date</b> :	17/11/2008
<b>Written By</b> :		<b>Qty:</b>	20
<b>Checked &amp; Approved By</b> :		<b>Um:</b>	Each
<b>Comment</b> :	Est. A: 01.05.08 New Issue EC		

## Additional Product

Job Number:



<b>Seq. #:</b>	<b>Machine Or Operation:</b>	<b>Description :</b>
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1.0	PG	PURCHASING
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## Comment: PURCHASING

Issue P/O: 7519

C 208111/04

a) Description: S.S round billet

b) Ø4.00" x 5.10" long

c) Tolerance on all dimensions are +0.030"/-0.000"

d) Material: 17-4PH Stainless steel (Ams 5643 or Aisi 630)

e) One blank makes 2 parts

f) Material certification required

(20)

2.0	D6104005P	17-4 SS Roundbar 4.00"OD
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**Comment:** Qty.: 1.0000 Each(s)/Unit Total : 20.0000 Each(s)  
 17-4 SS Roundbar 4.00"OD


3.0	PACKAGING 1	PACKAGING RESOURCE #1
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## Comment: PACKAGING RESOURCE #1

Receive &amp; Inspect For Transit Damage

Ensure material certification is attached


 2/11/08 (20)

4.0	QC6	DIMENSIONAL CHECK
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## Comment: DIMENSIONAL CHECK

Ensure Material certification comply to Dwg D6104

 08/11/23 (20)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Monday, 03/11/2008 12:12:34 PM  
User: Chantal Lavoie

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: ROUND BILLET 17-4

Job Number: 43150

Part Number: D6104005

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: \_\_\_\_\_

*PC 4/23 (20)*

6.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

*08/11/24*

Job Completion



*MF 08-11-24*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

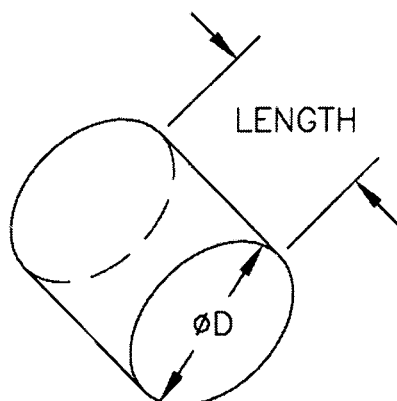
**NOTE:** Date & initial all entries



DESIGN <i>[Signature]</i>	DRAWN BY <i>[Signature]</i>	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D6104	Rev. B SHEET 1 OF 1
DATE 02.11.25		TITLE ROUND BILLET, 17-4	SCALE NTS
A	01.04.10	NEW ISSUE	
B	02.11.25	CLARIFY ALLOY SPEC ADDED D6104-009/-011 REDUCE LENGTH OF BILLETS	

RELEASED  
02.11.29 *[Signature]*

## SPECIFICATION CONTROL DRAWING



MATERIAL: 17-4 PH SS (AMS 5643 OR AISI 630) MIN UTS = 170 KSI (38 HRc)

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, DIAMETER x LENGTH (+0.030/-0.000) AS SHOWN.

TOLERANCE ON ALL DIMENSIONS IS +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES

Part No.	Alloy	D (Diameter)	Length
D6104-001	17-4 PH STAINLESS STEEL	Ø3.00	3.80
D6104-003	17-4 PH STAINLESS STEEL	Ø3.25	3.80
D6104-005	17-4 PH STAINLESS STEEL	Ø4.00	5.10
D6104-007	17-4 PH STAINLESS STEEL	Ø4.50	5.10
D6104-009	17-4 PH STAINLESS STEEL	Ø5.25	4.10
D6104-011	17-4 PH STAINLESS STEEL	Ø6.50	4.10

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W10', 43150  
C208/11/03

31 573679 691277 01

Metalex Castle

A.M. CASTLE &amp; Co. (Canada) Inc. SHIPPED NOV 19, 2008

573679

REQUISITION CLIENT-CUSTOMER REQUISITION NO.

NO. COM. CLIENT-CUST. ORD. NO.

7519

COMPTÉ-ACCT.

VEND.-SLS

TERR.

EXPÉDIE PAR-SHIP VIA

91037

200

50

MANITOULIN

ACHETEUR-PURCHASING AGENT

LINDA LACELLE

TELEPHONE

613 632-3336

H/C

TAXE

NO. COM. ORD

1

REGION LIVRAISON-DEL ZONE

C/C

F.A.B.-F.O.B.

PREPAID

BILL

NO. FEUILLE/EMBALLAGE-B/L NUMBER

RÉ A-SHIP TO:

VENDU A-SOLD TO:

DART AEROSPACE LTD

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

INFORMATION CRÉDIT-CRED. INFORMATION

ROUTE

01-NL-11/

30-NL-11/

31-NL-11/

INSTRUCTIONS/LIVRAISON-DELIVERY

IND-183548

INSTRUCTIONS LIVRAISON (CONT.)-DELIVERY (CONT'D.)

DESCRIPTION - ITEM 1

RD 17CR-4NI RT SOL. TREATED COND A 5.10"

GOLD

QTE/UNITE COM.-ORDERED

20 PCS

PCES/PO COM.-ORD

PCS

POIDS COM.-WT. ORDERE

37

BALLOTS-BUNDLES

PCES/PO EXP. SHIP.

POIDS EXP.-WT. SHIPPED

120

375

FORME-SHAPE I.A.C.

42464

44.070FT

COULÉE INFO-HEAT INFO QTE-QTY

4DL4 ✓

INSTRUCTIONS (CONT'D.)

20 x 5.1"

A.M. Castle & Co. certifies that the material(s) supplied under this document will meet and conform to the specifications of the product(s) described hereon.

A.M. Castle &amp; Co. (Canada) Inc.

WEIGHT FOR SHIPPING PURPOSES ONLY. SEE INVOICES FOR ACCURATE BILLING WEIGHT. PLEASE SIGN AND DATE DRIVER'S COPY FOR RECEIPT OF MATERIAL AND, IF CHECKED, TEST REPORTS.

DESCRIPTION - ITEM 2

QTE/UNITE COM.-ORDERED

PCES/PO COM.-ORD

POIDS COM.-WT. ORDERE

BALLOTS-BUNDLES

PCES/PO EXP. SHIP.

POIDS EXP.-WT. SHIPPED

FORME-SHAPE I.A.C.

ENT.

INSTRUCTIONS

COULÉE INFO-HEAT INFO QTE-QTY

**TERMS AND CONDITIONS  
OF SALE**

**SEE DISCLAIMERS AND LIMITATIONS  
ON THE REVERSE SIDE**

1 Box

INSTRUCTIONS (CONT'D.)

DESCRIPTION - ITEM 3

QTE/UNITE COM.-ORDERED

PCES/PO COM.-ORD

POIDS COM.-WT. ORDERE

BALLOTS-BUNDLES

PCES/PO EXP. SHIP.

POIDS EXP.-WT. SHIPPED

FORME-SHAPE I.A.C.

ENT.

ALL EXCEPTIONS FOR SHORTAGE OR DAMAGE MUST BE NOTED ON THE DRIVER COPY & CUSTOMER COPY OF THE DELIVERY RECEIPTS & SIGNED BY THE DRIVER & CUSTOMER. COPY OF SUCH RECEIPT PROPERLY NOTED MUST BE SUBMITTED WITHIN 10 DAYS WHEN CREDIT IS REQUESTED.

INSTRUCTIONS

COULÉE INFO-HEAT INFO QTE-QTY

NOM (LETTRE MOULÉE)-NAME (PRINT ONLY)

RECU PAR-RECEIVED BY

DATE RECU-  
DATE RECEIVED

FEUILLE D'EMBALLAGE - PACKING SLIP

# NORTH AMERICAN STAINLESS INSPECTION CERTIFICATE

**North American Stainless**  
 6870 Highway 42 East  
 Ghent, Kentucky 41045-9615  
 Telephone: (502) 347-6000  
 FAX: (502) 347-6001

Email: customerservice@northamericanstainless.com

2008 / 63317	DATE 8/25/2008
PACKING LIST # 421116	NUMBER 1
GRADE NAS 700 P.O.# 01-10404	Item Code: 42464
AISI ( 630 )	

CUSTOMER A.M. CASTLE & COMPANY	TOLERANCE A484 Rough Turn
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PRODUCT Round Bar, Annealed, Rough Turned	SURFACE AND DIMENSION CONTROL Without Objections	INTERGRANULAR CORROSION
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ORDER NUMBER	MARK#/ PROD ID	HEAT NUM	WEIGHT
LN47184	84001/BC17671	4DL4	509
"	84002/BC17673	4DL4	498
"	84003/BC17675	4DL4	500
"	84004/BC17676	4DL4	435

REQUIREMENTS AISI
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LENGTH 12.00 ft
SIZE 4.0000 Inches

MECHANICAL PROPERTIES										Ferrite %
HEAT NUM	UTS KSI	YS KSI	EL %	RA %	REC No.	FR90 No.	SEV. No.			
4DL4	202	183	10	35	42	13	23			1
Req Values	190	170	10	35	40	10	25			5.0

CHEMICAL COMPOSITION %															CM(Country of Melt)	ES(Spain)	US(United States)		
CH	HEAT	C	P	S	SI	Mn	Cr	Ni	Mo	Ti	N	Cu	Co	Cb					
US	4DL4	.0342	.0251	.0070	.6134	.5219	15.2388	4.2966	.0475	.0052	.0280	3.4600	.1173	.1256					
REQUIRED VALUES																			

CASILE METALS CORP

DATE RCYD 1/27/02

STEELMAKING PROCESS  
EAF+AOD+CC

## OBSERVATIONS/SPECIFICATIONS

UNS S17400, AMS 2303, ASTM A564-04, AMS 5641Q, AMS 2315E, ASME SA564-04

CASHE METALS CORP  
 DATE RCVD 8/27/08  
 IAC 42464  
 APPROVED BY [Signature]

STEELMAKING PROCESS  
 EAF+AOD+CC

QUALITY INSPECTOR

[Signature]  
 Eric Hess

Product complies w/ requirements of EU directive 2002.95.EC.RoHS. Material Free from Mercury contamination.  
 No weld repair. NAS certifies the analysis on certification is correct & the material meets specs stated.  
 We certify that the analysis on this certification is correct and the material meets the specifications stated.

T-356 P001/034 F100

08-27-08 11:53 FROM-